Effect of Water Content and Tween 80 to the Stability of Emulsified Biodiesel

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ABSTRACT

Emulsified biodiesel are often stabilized using a combination ratio water, biodiesel and surfactant in achieving stable emulsions. The objective of this study was to evaluate the long-term stability of three phase oil-in-water-in-oil (O/W/O) with respect to the water content and Tween 80. Biodiesel emulsions containing 5 mL, 10 mL and 15 mL water were produce with combination of 95 mL, 90 mL and 85 mL B20 (80 % diesel + 20 % biodiesel) and surfactant by using a mechanical stirrer machine. The experimental results show that increasing concentration of Tween 80 more than 1.5g gave destructive effect on water in oil emulsion stability. In addition, lowering concentration of water content contribute to low polydispersity of emulsion which produced the high emulsification stability.

KEYWORDS: Bio-Diesel, Emulsion Stability, O/W/O, Three Phase, Tween 80

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